SEQUENCE LISTING

```
agctgattct atcacattgt aagatgcctt tggataattc tacagtcctc ttaaatgaat     60
ctttagaact tggcaagtct cactagatac cttcaatcat cattttgagc tcaaagaatt    120
ctgagactta tggttggtca tatagaagag gaccttgaac ctatagtttc ctgaagaatc    180
agtttaaaag atccaaggag tacaaaagga gaagtacaaa tgtctactac aagacgaaaa    240
cgtagtatgt tatgttgttt accgtaagct gtagtaaaat gagctcgatt gttgacagag    300
atgacagtag tatttttgat gggttggtgg aagaagatga caaggacaaa gcgaaaagag    360
tatctagaaa caaatctgaa aagaaacgta gagatcaatt taatgttctc attaaagaac    420
tgggatccat gcttcctggt aatgctagaa agatggacaa atctactgtt ctgcagaaaa    480
gcattgattt tttacgaaaa cataaagaaa tcactgcaca gtcagatgct agtgaaattc    540
gacaggactg gaaacctaca ttccttagta atgaagagtt tacacaatta atgttagagg    600
ctcttgatgg ttttttttta gcaatcatga cagatggaag cataatatat gtgtctgaga    660
gtgtaacttc attacttgaa catttaccat ctgatcttgt ggatcaaagt atatttaatt    720
ttatcccaga aggggaacat tcagaggttt ataaaatact ctctactcat ctgctggaaa    780
gtgattcatt aacccccagaa tatttaaaat caaaaaatca gttagaattc tgttgtcaca    840
tgctgcgagg aacaatagac ccaaaggagc catctaccta tgaatatgta aaatttatag    900
gaaatttcaa atctttaaac agtgtatcct cttcagcaca caatggtttt gaaggaacta    960
tacaacgcac acataggcca tcttatgaag atagagtttg ttttgtagct actgtcaggt   1020
tagctacacc tcagttcatc aaggaaatgt gcactgttga agaacccaat gaagagttta   1080
catctagaca tagtttagaa tggaagtttc tgtttctaga tcacagggca ccacccataa   1140
tagggtattt gccatttgaa gttctgggaa catcaggcta tgattactat catgtggatg   1200
acctagaaaa tttggcaaaa tgtcatgagc acttaatgca atatgggaaa ggcaaatcat   1260
gttattatag gttcctgact aaggggcaac agtggatttg gcttcagact cattattata   1320
tcacttacca tcagtggaat tcaaggccag agtttattgt ttgtactcac actgtagtaa   1380
gttatgcaga agttagggct gaaagacgac gagaacttgg cattgaagag tctcttcctg   1440
```

```
agacagctgc tgacaaaagc caagattctg ggtcagataa tcgtataaac acagtcagtc    1500
tcaaggaagc attggaaagg tttgatcaca gcccaacccc ttctgcctct tctcggagtt    1560
caagaaaatc atctcacacg gccgtctcag acccttcctc aacaccaacc aagatcccga    1620
cggatacgag cactccaccc aggcagcatt taccagctca tgagaagatg gtgcaaagaa    1680
ggtcatcatt tagtagtcag tccataaatt cccagtctgt tggttcatca ttaacacagc    1740
cagtgatgtc tcaagctaca aatttaccaa ttccacaagg catgtcccag tttcagtttt    1800
cagctcaatt aggagccatg caacatctga aagaccaatt ggaacaacgg acacgcatga    1860
tagaagcaaa tattcatcgg caacaagaag aactaagaaa aattcaagaa caacttcaga    1920
tggtccatgg tcaggggctg cagatgtttt tgcaacaatc aaatcctggg ttgaattttg    1980
gttccgttca actttcttct ggaaattcat ctaacatcca gcaacttgca cctataaata    2040
tgcaaggcca agttgttcct actaaccaga ttcaaagtgg aatgaatact ggacacattg    2100
gcacaactca gcacatgata caacaacaga ctttacagag tacatcaact cagagtcaac    2160
aaaatgtact gagtgggcac agtcagcaaa catctctacc cagtcagaca cagagcactc    2220
ttacagcccc actgtataac actatggtga tttctcagcc tgcagccgga agcatggtcc    2280
agattccatc tagtatgcca caaaacagca cccagagtgc tgcagtaact acattcactc    2340
aggacaggca gataagattt tctcaaggtc aacaacttgt gaccaaatta gtgactgctc    2400
ctgtagcttg tggggcagtc atggtaccta gtactatgct tatgggccag gtggtgactg    2460
catatcctac ttttgctaca caacagcaac agtcacagac attgtcagta acgcagcagc    2520
agcagcagca gagctcccag gagcagcagc tcacttcagt tcagcaacca tctcaggctc    2580
agctgaccca gccaccgcaa caatttttac agacttctag gttgctccat gggaatccct    2640
caactcaact cattctctct gctgcatttc ctctacaaca gagcaccttc cctcagtcac    2700
atcaccagca acatcagtct cagcaacagc agcaactcag ccggcacagg actgacagct    2760
tgcccgaccc ttccaaggtt caaccacagt agcacacgtg cttcctctct tgacatcaag    2820
ggaggaaggg gatggcccat taagagttac tcagatgacc tgaggaaagg agggaaagtt    2880
ccagcagttt catgagatgc agtattgagt gttctagttc ctggaattag ttggcagaga    2940
aaatgctgcc tagtgctaca gatgtacatt aaataccagc cagcaggagg tgatcatagg    3000
ggcacagcca gttctgacag tgttttaggt gcctggatat tttttgatgg aaaaagaata    3060
tattgccaaa tattaagaag ctcagctatg aaatgacctc cagggaatca gaaaggcact    3120
aatgatgtta gtaacttta gtggttctgt gcctcttatc aagtgttaca gaggacatac    3180
cactgccatg tcaggggttt gcttacagtg atgccatgaa gacagtccag tagacttggt    3240
agcgaccccc tcccccaacc cctctccctt ttcagataat gatggaacag taattacttt    3300
cagaatgttg tgtgggttca aattctctat gtacagatga tgtaaaaata tgtatatgtc    3360
tagataaaag gagagaaagc aaaacatttt gtatgctgca tgaaagcgtt atctcttcct    3420
tacaggtgtg agcacctttc ctgaaattct gacaccatgt gcaaactgat ccatcctgtt    3480
tttccttttg tttacaacac agtagtgttc tgttcacttt tccggggcac aagtttttt    3540
gttcatactt tggctgtgat gtcacagttt gttcagtgag gtatgatgtg ctgctgggaa    3600
tggatttttt tttttcaggt taaattattg atacaacagg attttcaagt tattcagaaa    3660
tatccctcat ttcattattt ttcaattatg tttgaaaata ggatttgcac tgctttatt    3720
taggtggctg ggagttttga ttgcatattt tgttatagtt catagttgga aatatttgcg    3780
taaatggttt tcaacaagcc tgaaagtaat ttcaagaatg tttcagttat agaggtaaaa    3840
tttgcacaca aaacatctta ggcactttt aacattctca atcatgggaa ttttaacttt    3900
tgggatttgt tgaaatcttt tttattatcc ttcacaattt caatgcttct tttagtcaga    3960
aatgattcag ggttatttga ggggaaaaa ccccatagtg ccttgatttt aattcaggtg    4020
ataactcacc atcttgaagt cattgtccgg tttccgtagc agttttgaaa ccttagtacc    4080
tttttaacag catgtgggtg tcagtgtcat tattagtctc ctaataagtt cctctgaaga    4140
ctgctatcag tctcttggac tggagttaca aataatttag aaataaaaga tgataaccta    4200
acactatcat agttattaat gtgatcctaa aattgtttcc taaatcagca tttttcttta    4260
gtcatttaag aatttaccag aaatatttgc tcaatatgat cttgatattc ctacaaagaa    4320
aaagaaggg gtagggattt ggctatgcct tcactacaac attagaatat tgtaactcac    4380
atgccttcta aacgtgaact aagatttcct ttggcaatat catattctaa aagtaataaa    4440
ttccaataca agttacatac atttaaaaaa cattttacag attttatggt actaatgaaa    4500
tttacagtga tagaacaaaa gaggattagt agaaaataca ttattagaat ataaaaaatg    4560
ttattactga ggaaagggag gagaggacaa gtgtaataaa tcaaaattga cctcaaaaga    4620
aaatgtgtaa cagagttgag gttgttaaaa cagaaaaggt tctgaataat gaagattaac    4680
ctaatgcaga attgctaggt aaagaggtca ggggaatgct aagccagttc ttaagacttc    4740
tctgtcctct gctttgctgt tatccttaag gcatatactt tgtctttctg cagaaaattc    4800
tacctggcta caattacttt gaacattaat gttgaaaaag aaaacaacca aagaaaattg    4860
```

```
gtacttaccc ttctacaaaa gaagtgtgac tagatatcaa tcagtaatta acatatcaag    4920
gagctcttct agctaaatga ccatccagta gagatttccc acattcccat gaatatcaag    4980
aatagttgtc agaatatgta tgtacctgag catatgtaca cagacaaggg ggatgttgtg    5040
gaatatggca atagcattgt tcttctcccc tttcaaattg cctttcttga ccttatgcca    5100
ttccatatat atctgagttg tgcctcattt atttattggc aatacctagt gatacggatt    5160
tagctaacaa aagatatgaa gaactattat attgaggcct gtcctctaca taccacactt    5220
aaaagatggt gaactgtgag tactacttag gttgacagca acaaagcata agacaagccc    5280
caggtaaacg tctaaactgt ttactcacat tgtcctactc cagccccttc aattatttcc    5340
catctccaca aatagtcggg ggaaaaaatt aaaattttcc tttatgattc ttactgttct    5400
tcgcagctca tcttttcctg cttagaatta accattgcta atttaaagga gcagctagct    5460
gctttctgt cagtctgaag cgtagtagtg gaagaggtag taagcaccag ctgcctcttt     5520
gctgctttgt tttcctcctg attctcttaa atttgggttg caaagctatc ccgccccca     5580
ccctgcccca tgaaacttga gcattcaaat gaagattcag cagtgtctgt tcttcatttc    5640
tatagccaaa gctgttagtt aaaatcccaa atctatagca tttaaagata ccaaatagaa    5700
acaccttcca gcttt                                                     5715
```

        <210> 2
        <211> 846
        <212> PRT
        <213> HOMO SAPIENS

        <400> 2
```
Met Leu Phe Thr Val Ser Cys Ser Lys Met Ser Ser Ile Val Asp Arg
1               5                   10                  15
Asp Asp Ser Ser Ile Phe Asp Gly Leu Val Glu Glu Asp Asp Lys Asp
            20                  25                  30
Lys Ala Lys Arg Val Ser Arg Asn Lys Ser Glu Lys Lys Arg Arg Asp
        35                  40                  45
Gln Phe Asn Val Leu Ile Lys Glu Leu Gly Ser Met Leu Pro Gly Asn
    50                  55                  60
Ala Arg Lys Met Asp Lys Ser Thr Val Leu Gln Lys Ser Ile Asp Phe
65                  70                  75                  80
Leu Arg Lys His Lys Glu Ile Thr Ala Gln Ser Asp Ala Ser Glu Ile
                85                  90                  95
Arg Gln Asp Trp Lys Pro Thr Phe Leu Ser Asn Glu Glu Phe Thr Gln
            100                 105                 110
Leu Met Leu Glu Ala Leu Asp Gly Phe Phe Leu Ala Ile Met Thr Asp
        115                 120                 125
Gly Ser Ile Ile Tyr Val Ser Glu Ser Val Thr Ser Leu Leu Glu His
    130                 135                 140
Leu Pro Ser Asp Leu Val Asp Gln Ser Ile Phe Asn Phe Ile Pro Glu
145                 150                 155                 160
Gly Glu His Ser Glu Val Tyr Lys Ile Leu Ser Thr His Leu Leu Glu
                165                 170                 175
Ser Asp Ser Leu Thr Pro Glu Tyr Leu Lys Ser Lys Asn Gln Leu Glu
            180                 185                 190
Phe Cys Cys His Met Leu Arg Gly Thr Ile Asp Pro Lys Glu Pro Ser
        195                 200                 205
Thr Tyr Glu Tyr Val Lys Phe Ile Gly Asn Phe Lys Ser Leu Asn Ser
    210                 215                 220
Val Ser Ser Ser Ala His Asn Gly Phe Glu Gly Thr Ile Gln Arg Thr
225                 230                 235                 240
His Arg Pro Ser Tyr Glu Asp Arg Val Cys Phe Val Ala Thr Val Arg
                245                 250                 255
Leu Ala Thr Pro Gln Phe Ile Lys Glu Met Cys Thr Val Glu Glu Pro
```

```
                 260                    265                    270
Asn Glu Glu Phe Thr Ser Arg His Ser Leu Glu Trp Lys Phe Leu Phe
         275                    280                    285
Leu Asp His Arg Ala Pro Pro Ile Ile Gly Tyr Leu Pro Phe Glu Val
         290                    295                    300
Leu Gly Thr Ser Gly Tyr Asp Tyr Tyr His Val Asp Asp Leu Glu Asn
305                    310                    315                    320
Leu Ala Lys Cys His Glu His Leu Met Gln Tyr Gly Lys Gly Lys Ser
                 325                    330                    335
Cys Tyr Tyr Arg Phe Leu Thr Lys Gly Gln Gln Trp Ile Trp Leu Gln
                 340                    345                    350
Thr His Tyr Tyr Ile Thr Tyr His Gln Trp Asn Ser Arg Pro Glu Phe
                 355                    360                    365
Ile Val Cys Thr His Thr Val Val Ser Tyr Ala Glu Val Arg Ala Glu
         370                    375                    380
Arg Arg Arg Glu Leu Gly Ile Glu Glu Ser Leu Pro Glu Thr Ala Ala
385                    390                    395                    400
Asp Lys Ser Gln Asp Ser Gly Ser Asp Asn Arg Ile Asn Thr Val Ser
                 405                    410                    415
Leu Lys Glu Ala Leu Glu Arg Phe Asp His Ser Pro Thr Pro Ser Ala
                 420                    425                    430
Ser Ser Arg Ser Ser Arg Lys Ser Ser His Thr Ala Val Ser Asp Pro
         435                    440                    445
Ser Ser Thr Pro Thr Lys Ile Pro Thr Asp Thr Ser Thr Pro Pro Arg
         450                    455                    460
Gln His Leu Pro Ala His Glu Lys Met Val Gln Arg Arg Ser Ser Phe
465                    470                    475                    480
Ser Ser Gln Ser Ile Asn Ser Gln Ser Val Gly Ser Ser Leu Thr Gln
                 485                    490                    495
Pro Val Met Ser Gln Ala Thr Asn Leu Pro Ile Pro Gln Gly Met Ser
                 500                    505                    510
Gln Phe Gln Phe Ser Ala Gln Leu Gly Ala Met Gln His Leu Lys Asp
                 515                    520                    525
Gln Leu Glu Gln Arg Thr Arg Met Ile Glu Ala Asn Ile His Arg Gln
         530                    535                    540
Gln Glu Glu Leu Arg Lys Ile Gln Glu Gln Leu Gln Met Val His Gly
545                    550                    555                    560
Gln Gly Leu Gln Met Phe Leu Gln Gln Ser Asn Pro Gly Leu Asn Phe
                 565                    570                    575
Gly Ser Val Gln Leu Ser Ser Gly Asn Ser Ser Asn Ile Gln Gln Leu
                 580                    585                    590
Ala Pro Ile Asn Met Gln Gly Gln Val Val Pro Thr Asn Gln Ile Gln
                 595                    600                    605
Ser Gly Met Asn Thr Gly His Ile Gly Thr Thr Gln His Met Ile Gln
         610                    615                    620
Gln Gln Thr Leu Gln Ser Thr Ser Thr Gln Ser Gln Gln Asn Val Leu
625                    630                    635                    640
Ser Gly His Ser Gln Gln Thr Ser Leu Pro Ser Gln Thr Gln Ser Thr
                 645                    650                    655
Leu Thr Ala Pro Leu Tyr Asn Thr Met Val Ile Ser Gln Pro Ala Ala
                 660                    665                    670
Gly Ser Met Val Gln Ile Pro Ser Ser Met Pro Gln Asn Ser Thr Gln
                 675                    680                    685
Ser Ala Ala Val Thr Thr Phe Thr Gln Asp Arg Gln Ile Arg Phe Ser
         690                    695                    700
Gln Gly Gln Gln Leu Val Thr Lys Leu Val Thr Ala Pro Val Ala Cys
705                    710                    715                    720
```

```
Gly Ala Val Met Val Pro Ser Thr Met Leu Met Gly Gln Val Val Thr
            725             730             735
Ala Tyr Pro Thr Phe Ala Thr Gln Gln Gln Gln Ser Gln Thr Leu Ser
            740             745             750
Val Thr Gln Gln Gln Gln Gln Gln Ser Ser Gln Glu Gln Gln Leu Thr
        755             760             765
Ser Val Gln Gln Pro Ser Gln Ala Gln Leu Thr Gln Pro Pro Gln Gln
    770             775             780
Phe Leu Gln Thr Ser Arg Leu Leu His Gly Asn Pro Ser Thr Gln Leu
785             790             795                         800
Ile Leu Ser Ala Ala Phe Pro Leu Gln Gln Ser Thr Phe Pro Gln Ser
            805             810             815
His His Gln Gln His Gln Ser Gln Gln Gln Gln Gln Leu Ser Arg His
        820             825             830
Arg Thr Asp Ser Leu Pro Asp Pro Ser Lys Val Gln Pro Gln
        835             840             845
```